

E-CIGARETTES: IMPLICATIONS FOR PUBLIC HEALTH POLICY AND PRACTICE

Promoting a Healthier Wyoming • September 19, 2019



Centers for Disease Control and Prevention

National Center for Chronic Disease Prevention and Health Promotion

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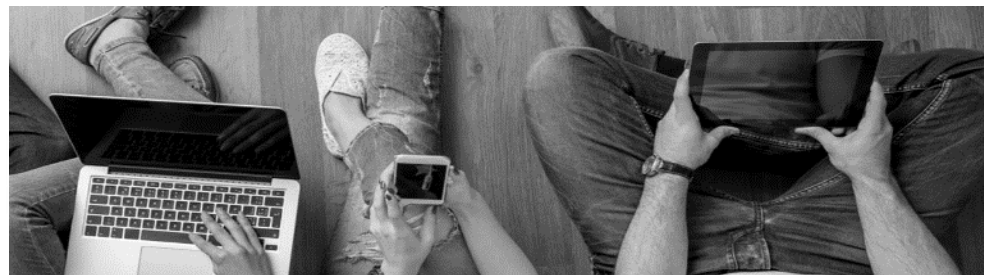


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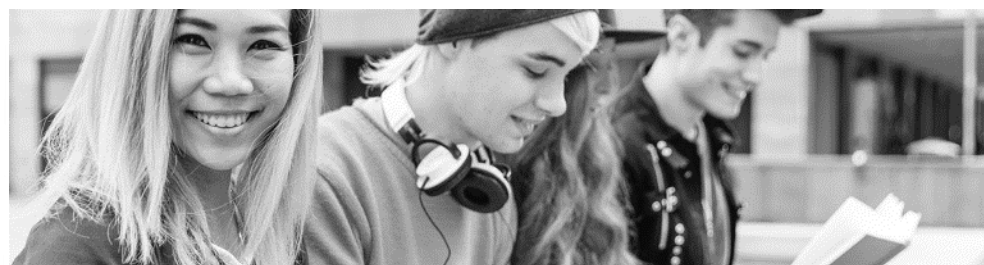
What Are They?

2



Why Are They Popular?

3



Who's Using Them?

4



Are They Safe?

5



What Can We Do About it?

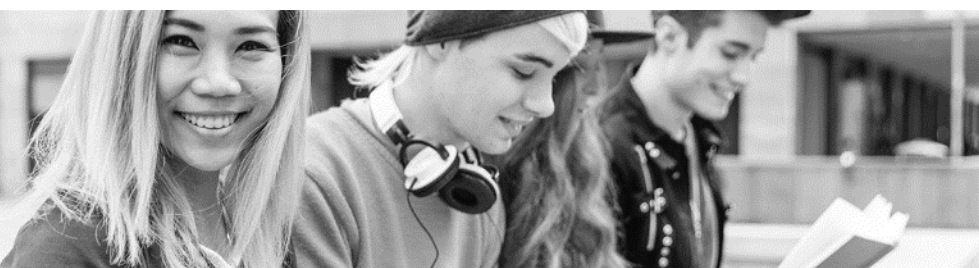
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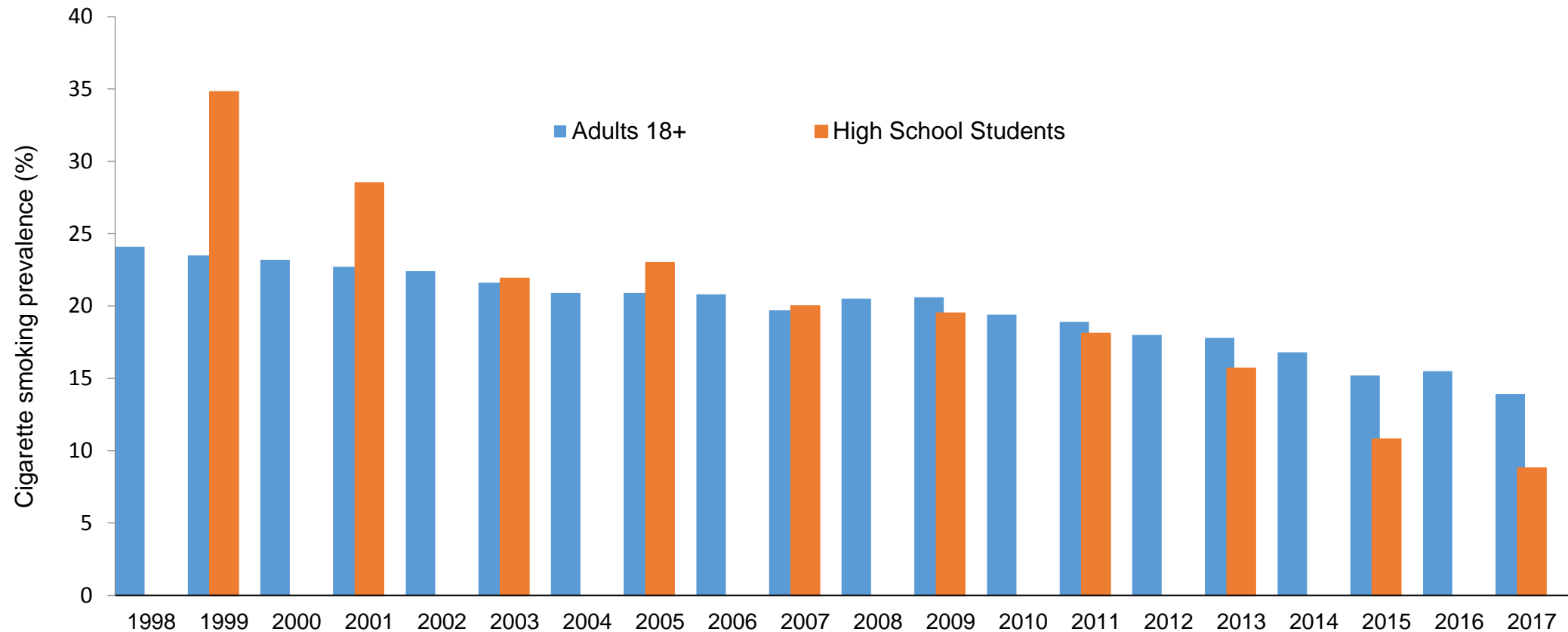
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What Can We Do About it?

GOOD NEWS: CIGARETTE SMOKING IS DOWN...



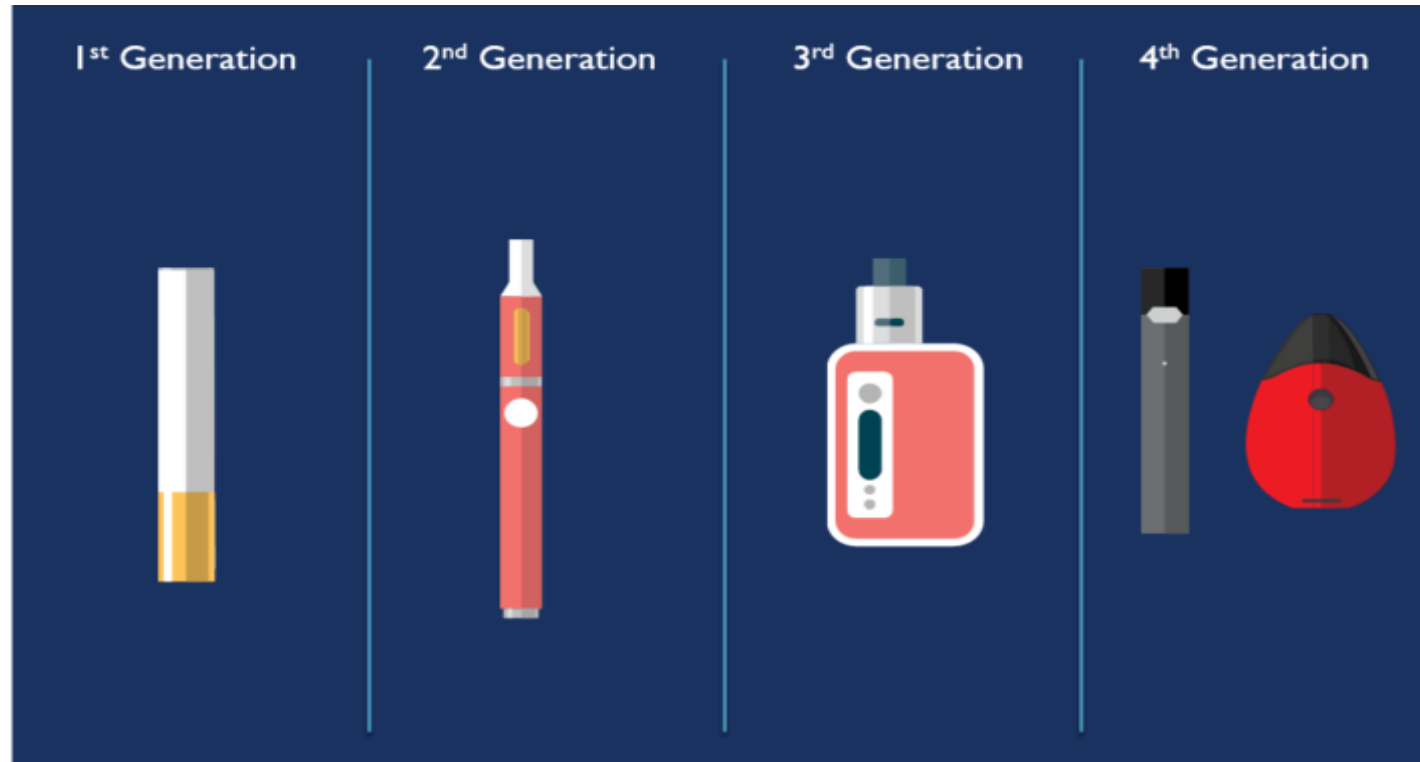
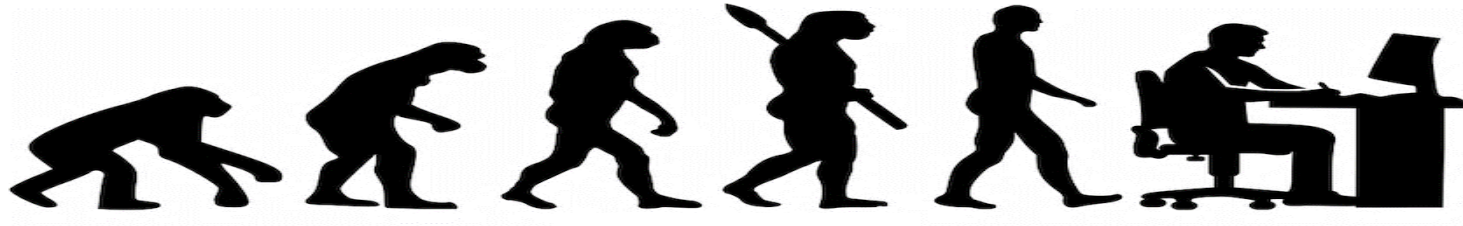
Source: Adult cigarette smoking prevalence data are from the National Health Interview Survey (NHIS).
High school cigarette smoking prevalence data are from the National Youth Risk Behavior Survey.

...AND THE TOBACCO PRODUCT LANDSCAPE CONTINUES TO EVOLVE

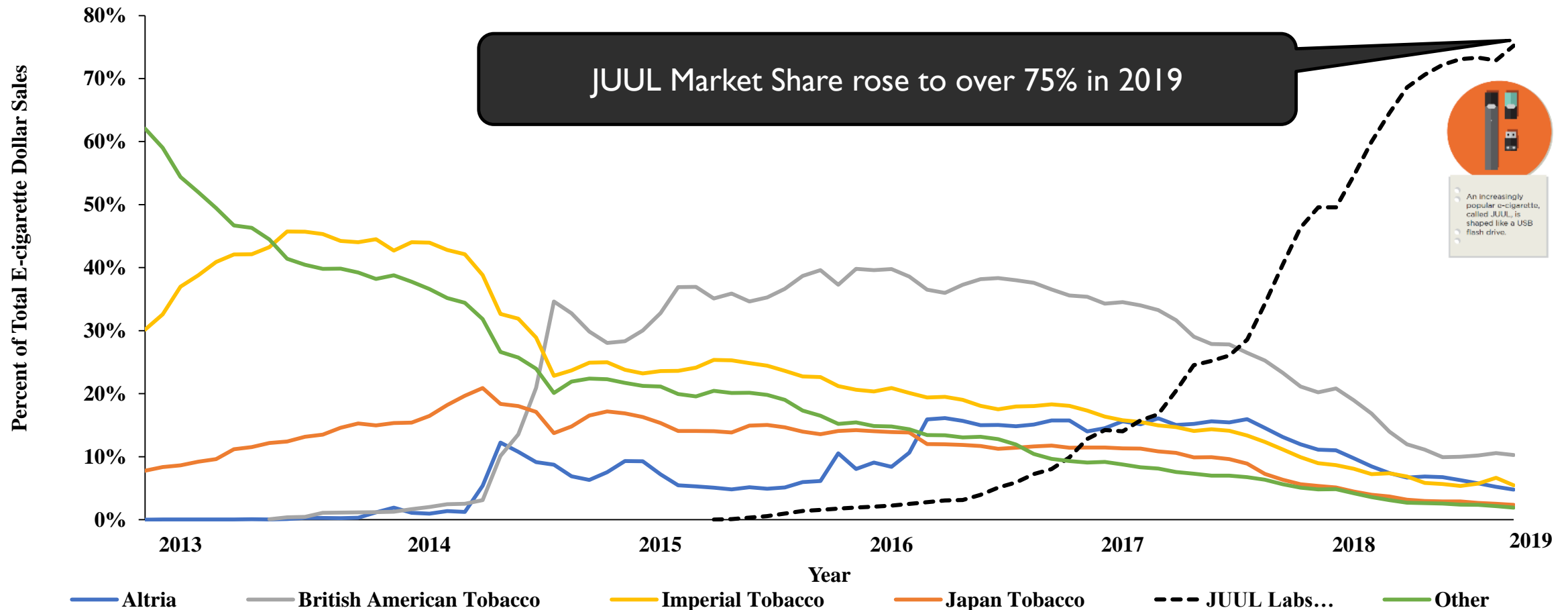




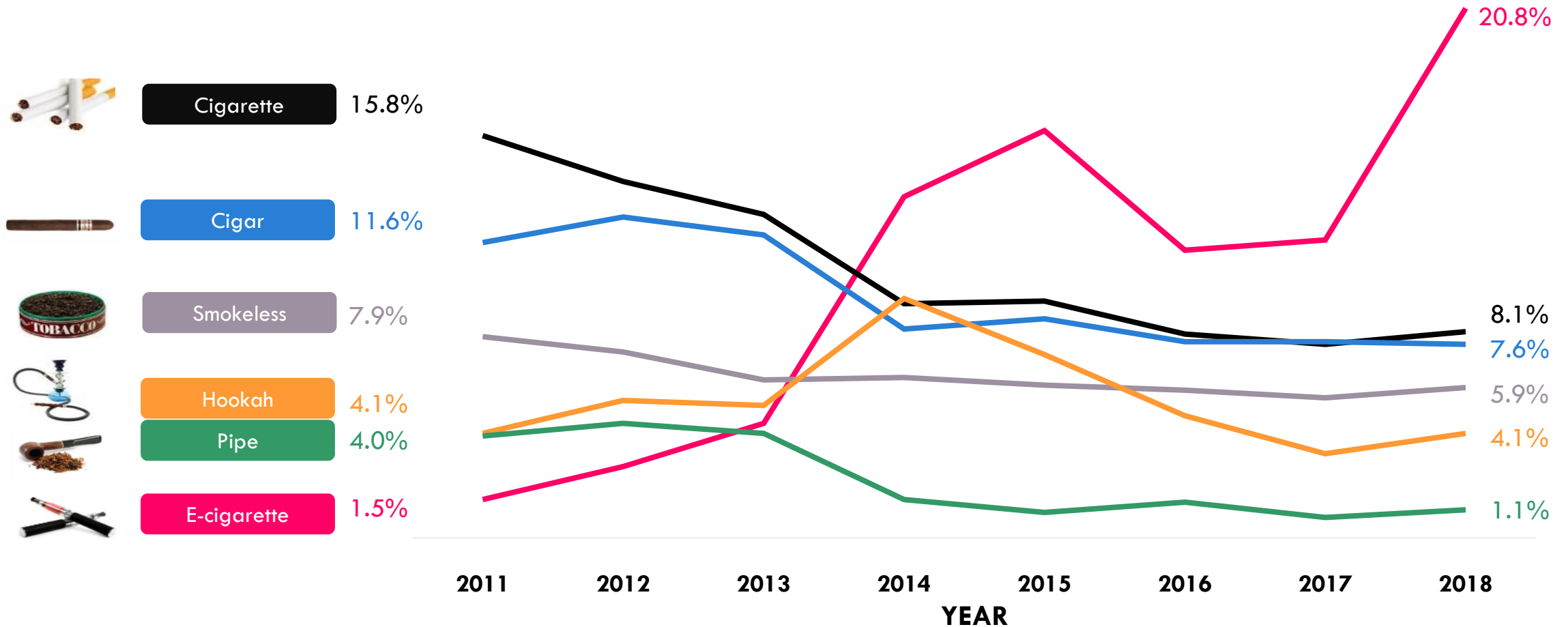
THE EVOLUTION OF E-CIGARETTES



E-CIGARETTE MARKET SHARE, BY DOLLAR SALES, US, 2013 - 2018



CURRENT TOBACCO PRODUCT USE AMONG U.S. HIGH SCHOOL STUDENTS – (2011–2018)



A VARIETY OF POD MODS CONTINUE TO ENTER THE U.S. MARKETPLACE



**MarkTen Elite
(Altria)**



**myBlu
(Imperial Tobacco)**



**Vuse Alto
(RJR)**



Myle



Phix



Suorin Drop



Suorin Air



KandyPens Feather



Daze MFG ZOOR

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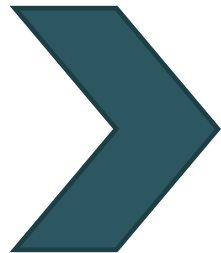


What Can We Do About it?

WHAT CAUSES YOUTH E-CIGARETTE USE?



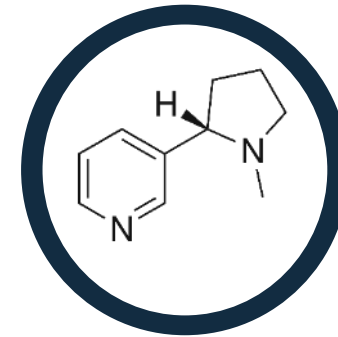
Advertising



Flavors



Nicotine



YOUTH EXPOSURE TO E-CIGARETTE ADVERTISING



E-CIGARETTE ADS

REACH NEARLY

4 IN 5

**U.S. MIDDLE AND
HIGH SCHOOL STUDENTS**

More than 20 million youth saw e-cigarette ads in 2016.

PERCENT OF STUDENTS EXPOSED TO E-CIGARETTE ADS



YOUTH EXPOSURE TO E-CIGARETTE ADS, 2016



Efforts to reduce youth exposure to e-cigarette ads are important to prevent and reduce youth use of these products.

Source: National Youth Tobacco Survey



EVOLUTION OF E-CIGARETTE MARKETING

"We don't think a lot about addiction here because we're not trying to design a cessation product at all...anything about health is not on our mind"

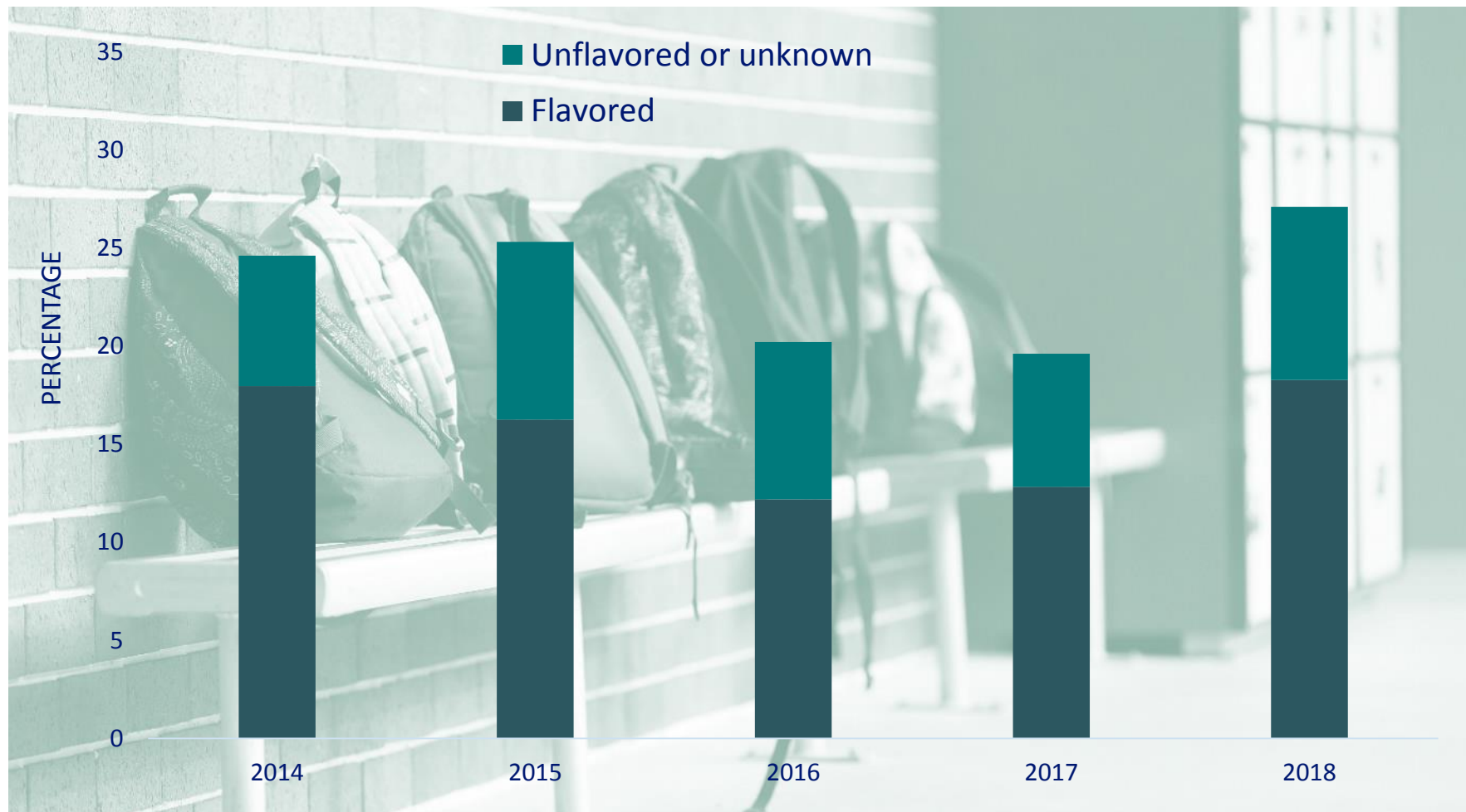
**JUUL R&D Engineer,
quoted in *The Verge*,
April 2015**

2015

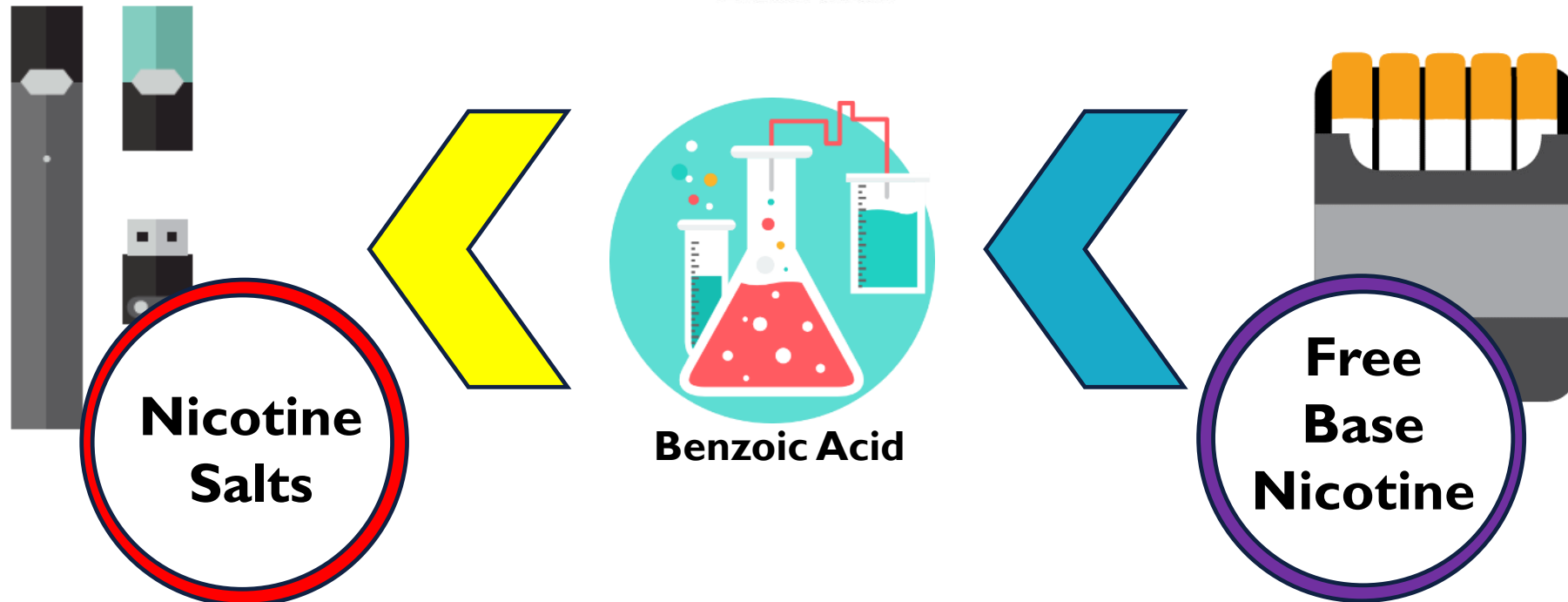
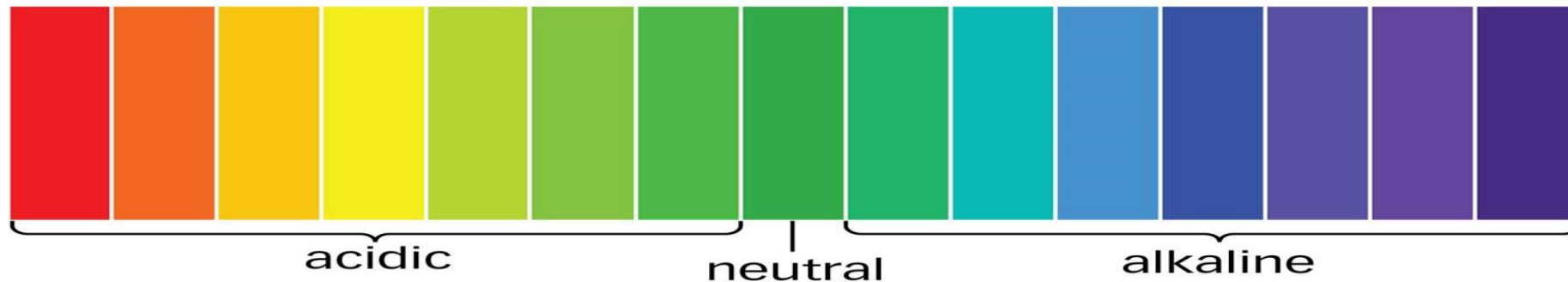


2018

USE OF FLAVORS IS PROMINENT AMONG YOUTH



NICOTINE SALTS ALLOW HIGH LEVELS OF NICOTINE TO BE INHALED MORE EASILY



JUUL CONTAINS A HIGH AMOUNT OF NICOTINE



All JUUL e-cigarettes have a high level of nicotine. According to the manufacturer, a single JUUL pod contains as much nicotine as a pack of 20 regular cigarettes.

WARNING:
**This product contains
nicotine. Nicotine is an
addictive chemical.**



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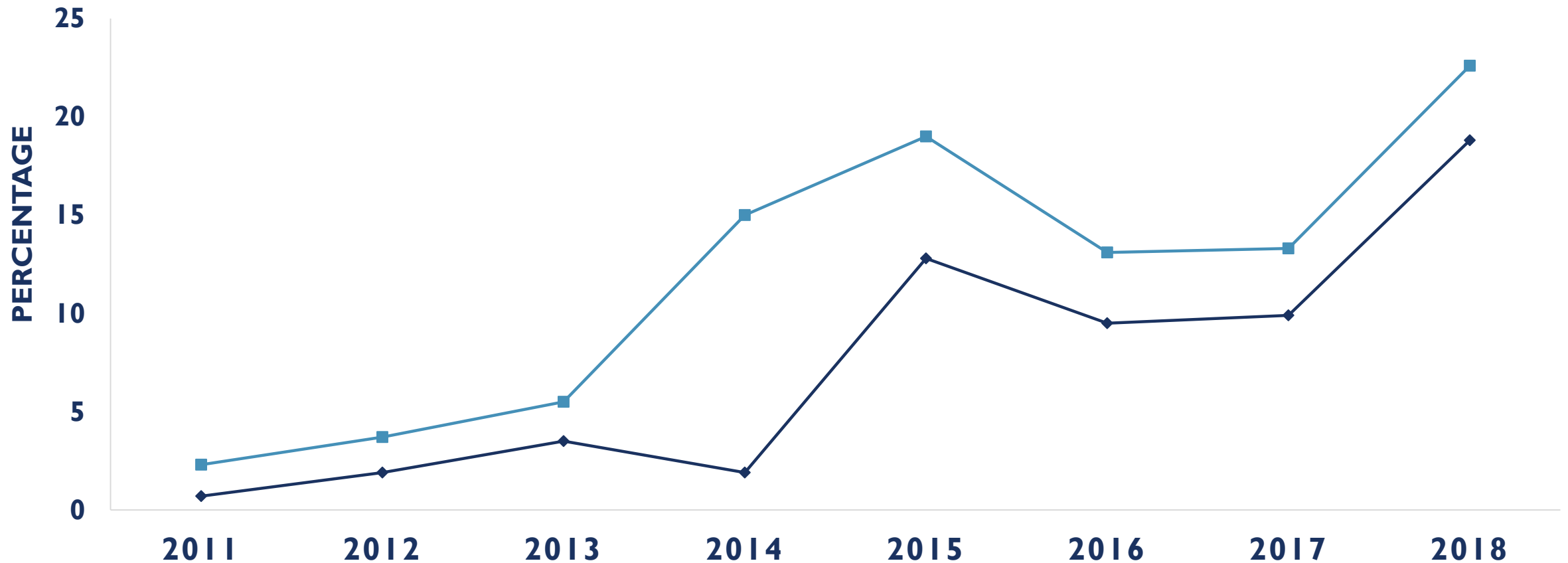


What Can We Do About it?



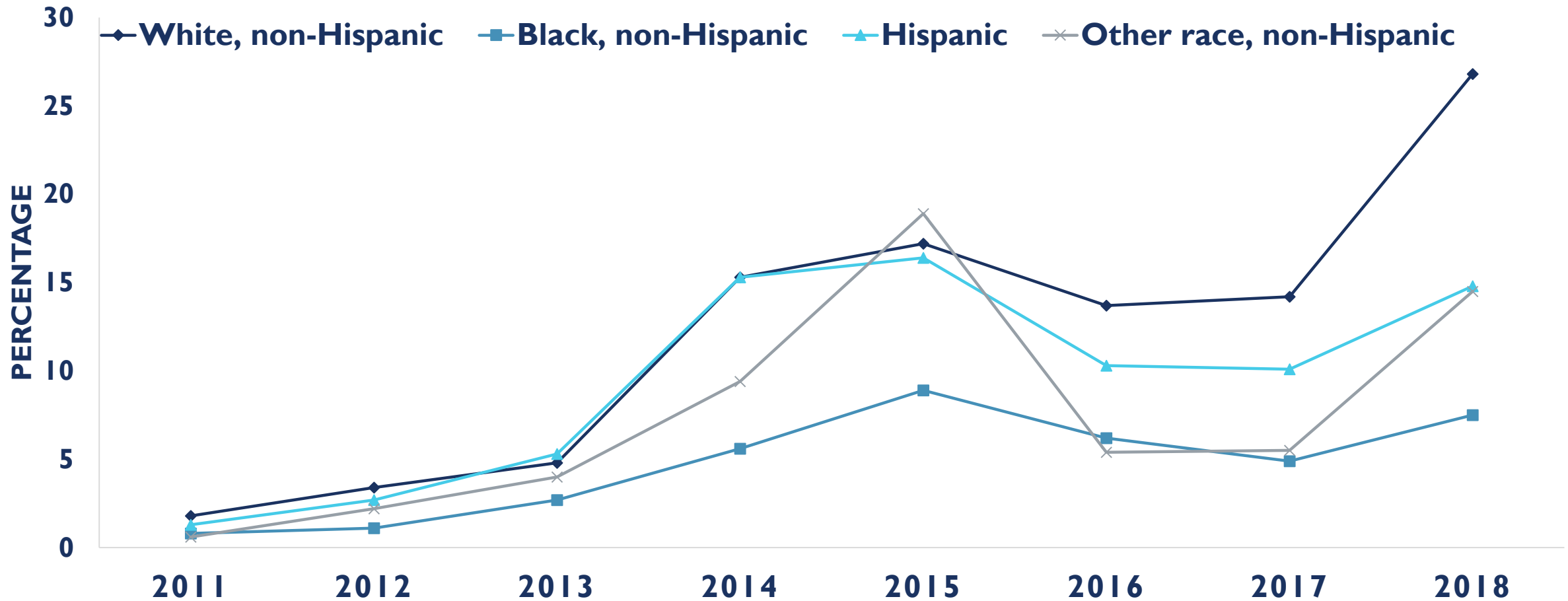
CURRENT E-CIGARETTE USE AMONG U.S. HIGH SCHOOL STUDENTS – BY **SEX** (2011–2018)

◆ Female ■ Male

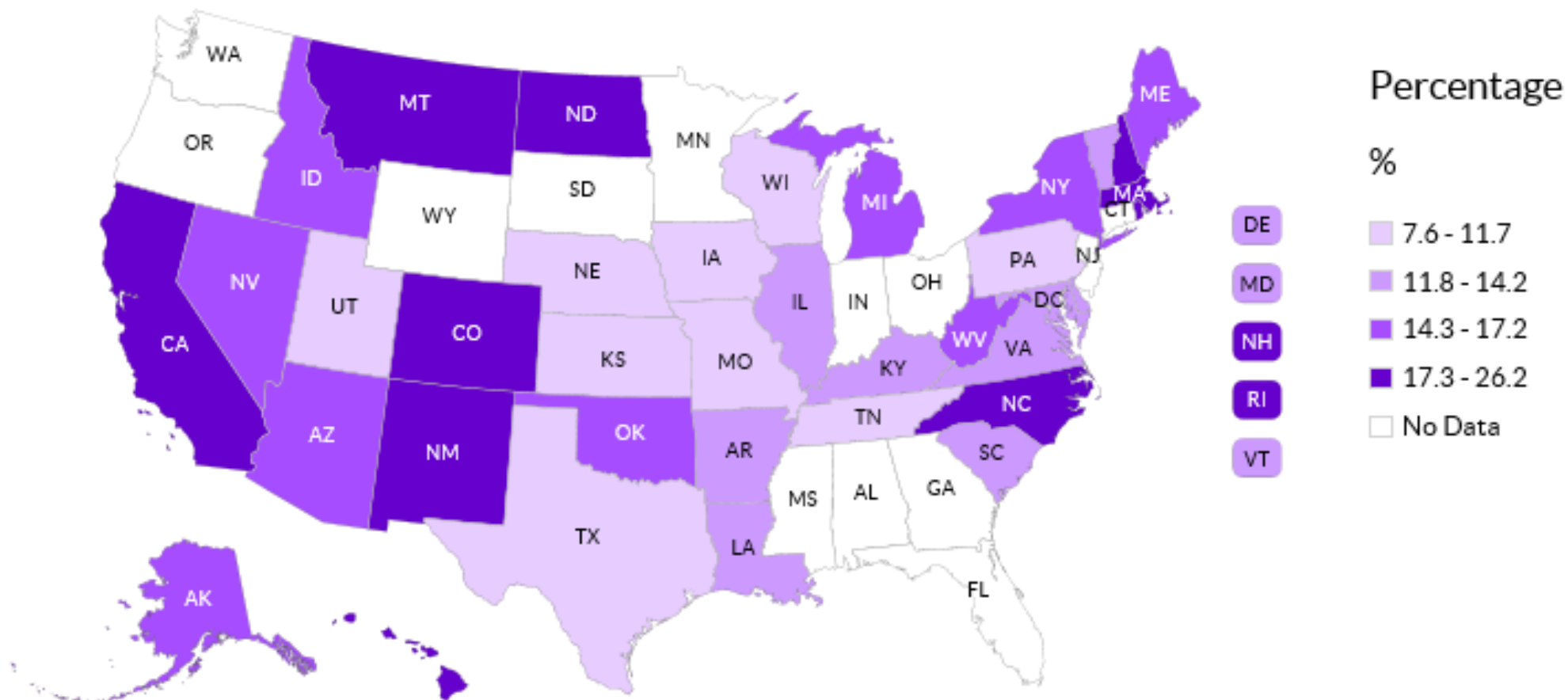




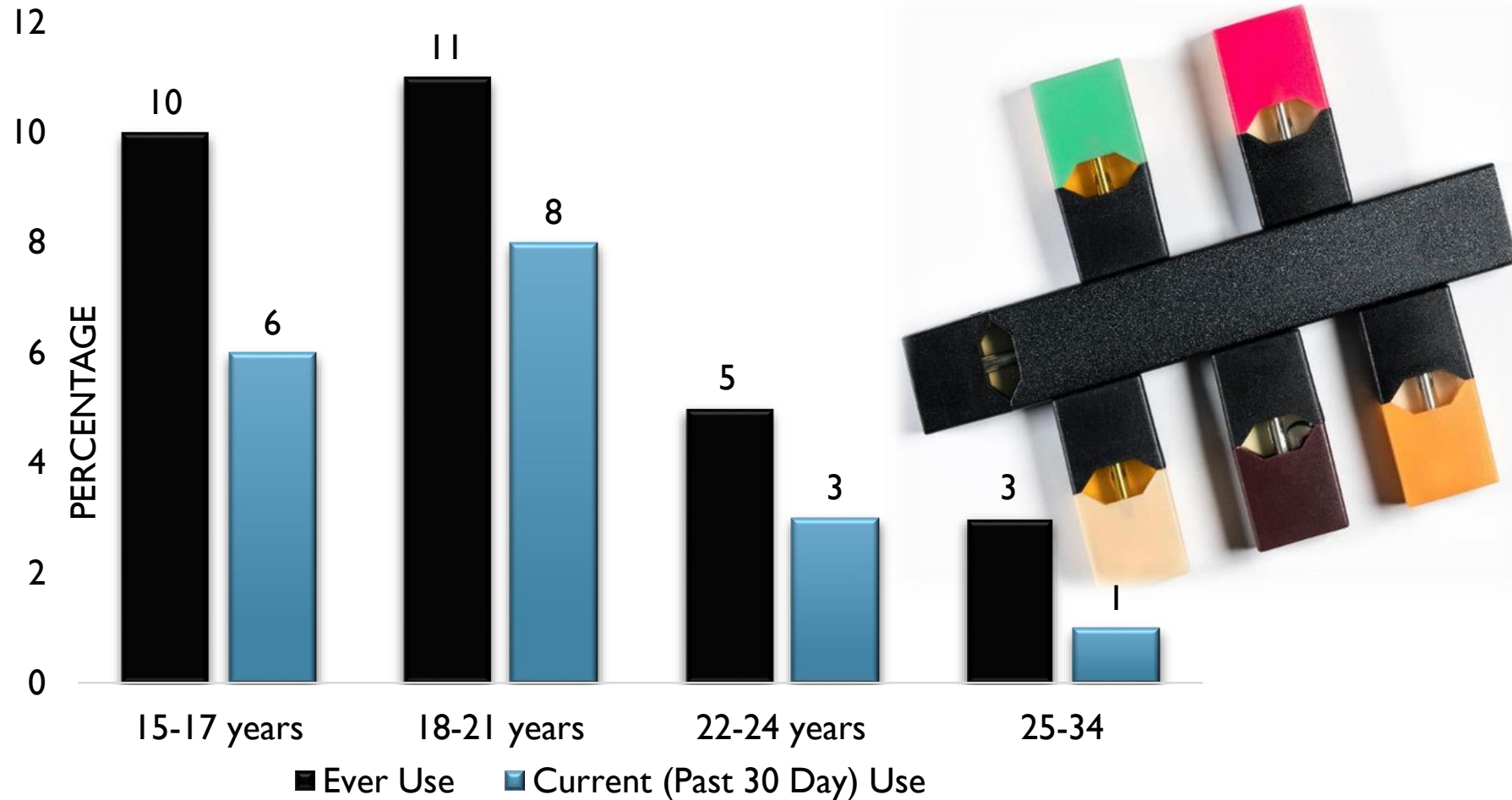
CURRENT E-CIGARETTE USE AMONG U.S. HIGH SCHOOL STUDENTS – BY **ETHNICITY** (2011–2018)



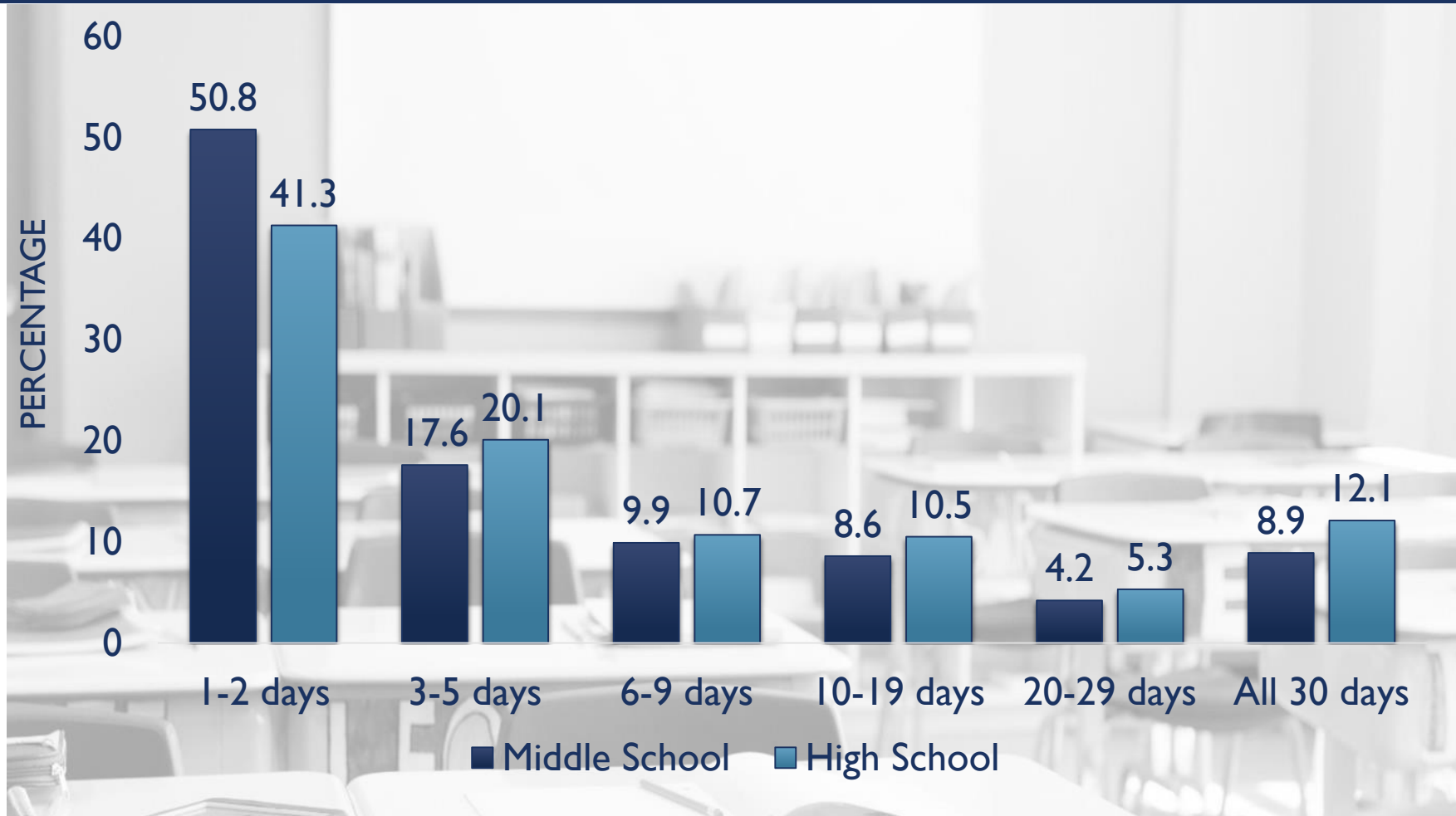
CURRENT ELECTRONIC TOBACCO PRODUCT USE AMONG U.S. HIGH SCHOOL STUDENTS – BY STATE, YRBS 2017



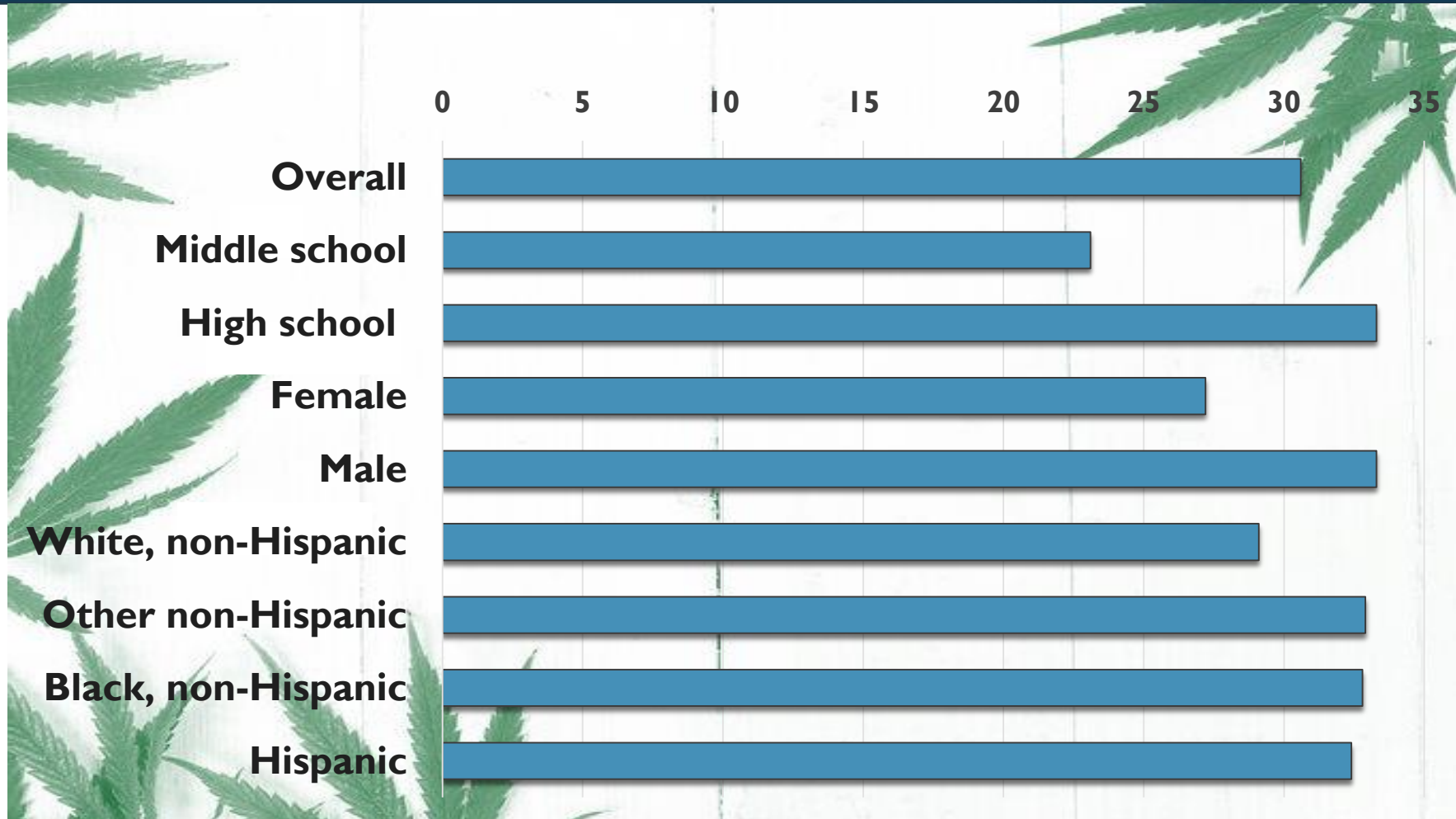
JUUL USE AMONG U.S. YOUNG PEOPLE (February – May, 2018)



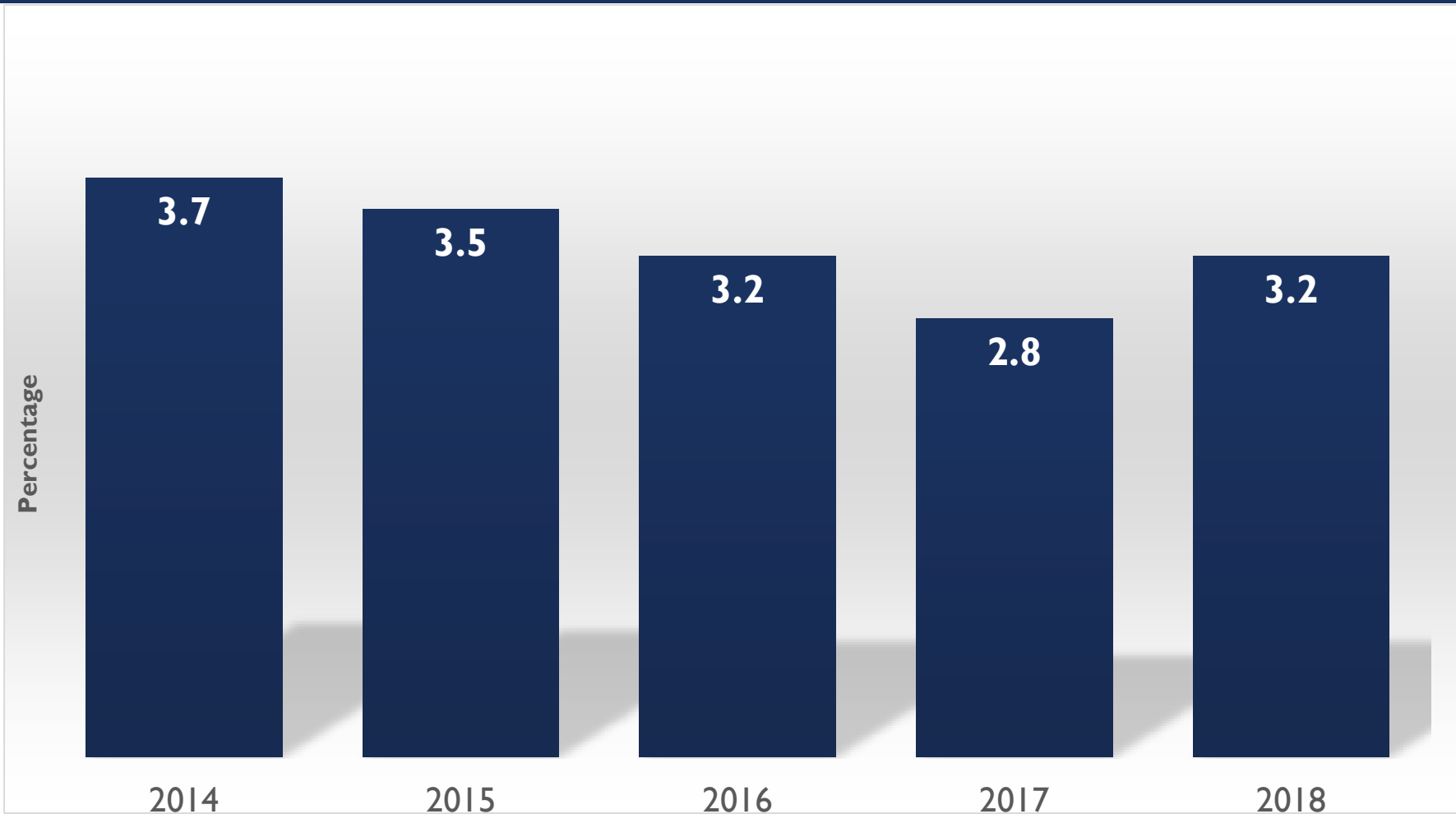
FREQUENCY OF YOUTH E-CIGARETTE USE, 2015-2017



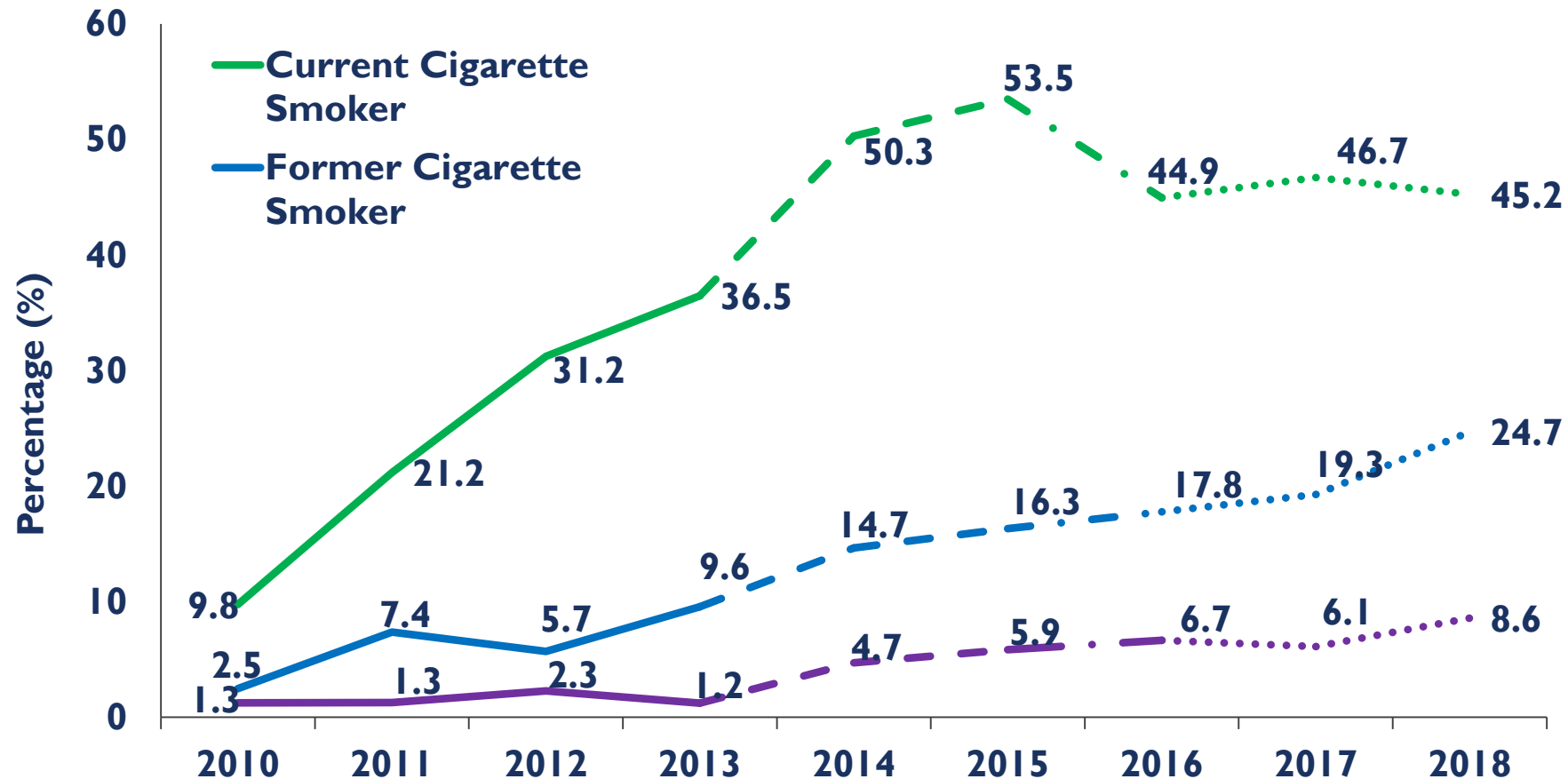
EVER USE OF CANNABIS IN AN E-CIGARETTE AMONG YOUTH E-CIGARETTE USERS - NYTS, 2016



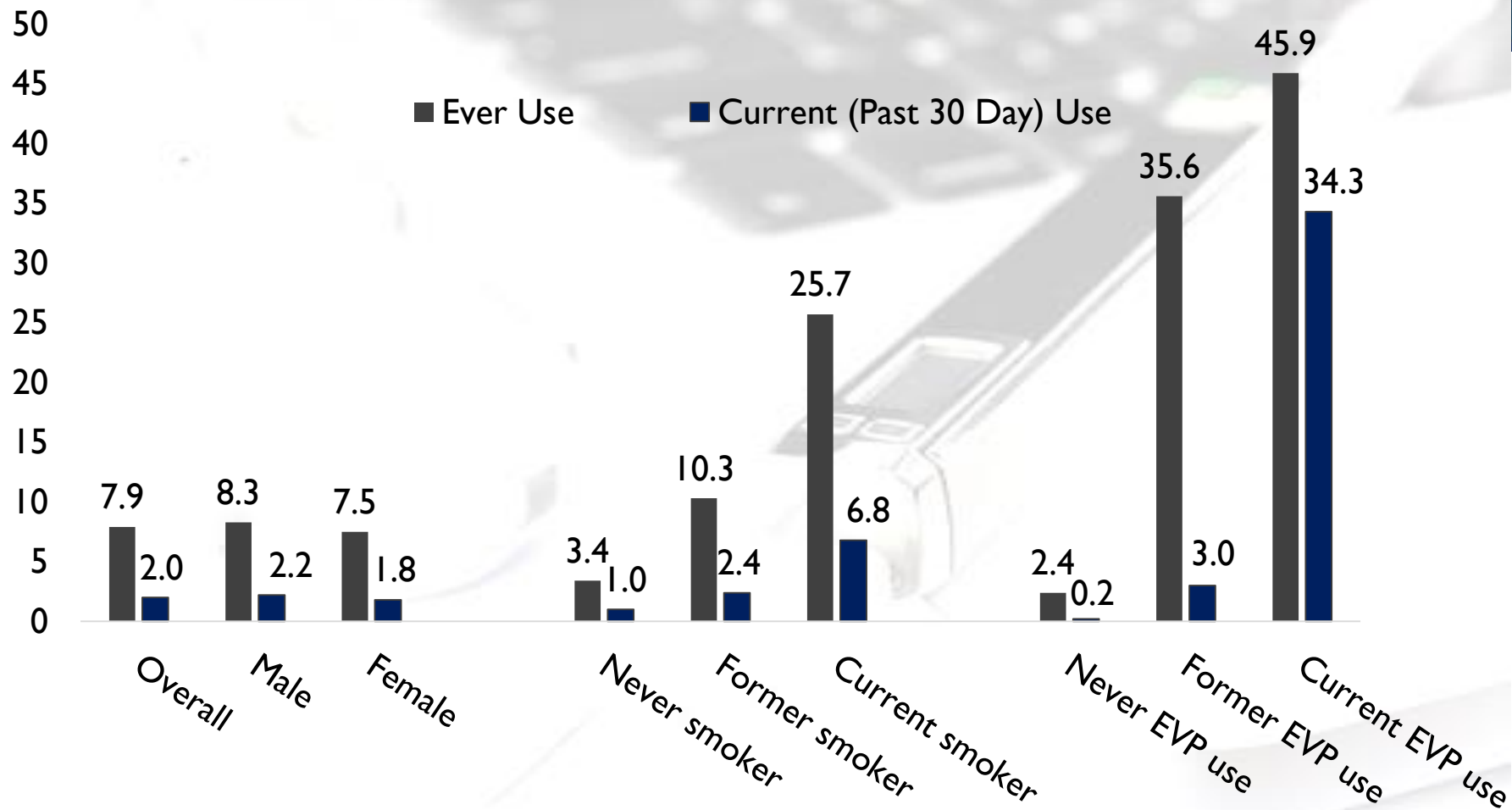
CURRENT E-CIGARETTE USE AMONG U.S. ADULTS, 2014-2018



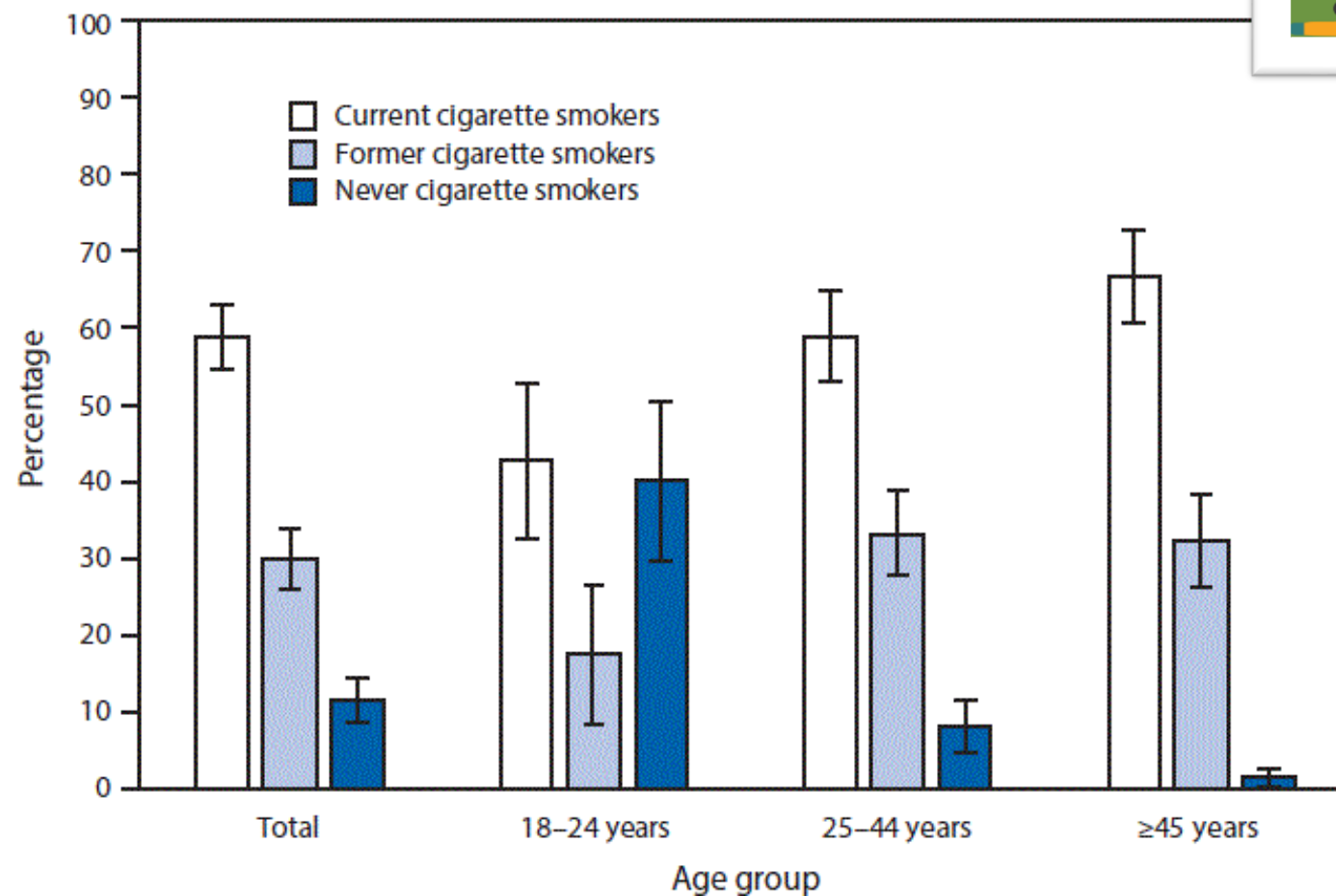
EVER USE OF E-CIGARETTES AMONG CURRENT, FORMER, AND NEVER ADULT CIGARETTE SMOKERS — 2010-2018



USE OF E-CIGARETTES SHAPED LIKE USB FLASH DRIVES AMONG U.S. ADULTS, 2018



RELATIONSHIP BETWEEN CIGARETTE SMOKING AND E-CIGARETTE USE



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What Can We Do About it?

NET PUBLIC HEALTH BENEFIT OR HARM?



Youth Initiation

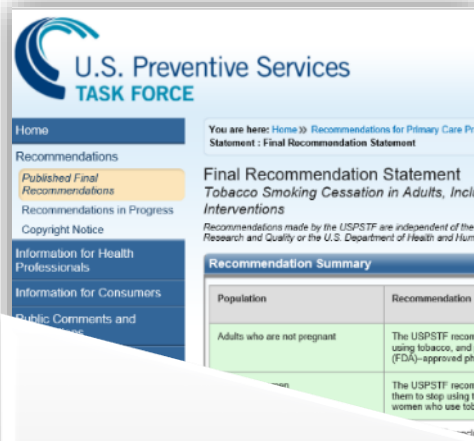


Adult Cessation

E-CIGARETTE USE AS A SMOKING CESSATION TOOL AMONG ADULTS



“The long-term safety of e-cigarettes is unknown.”



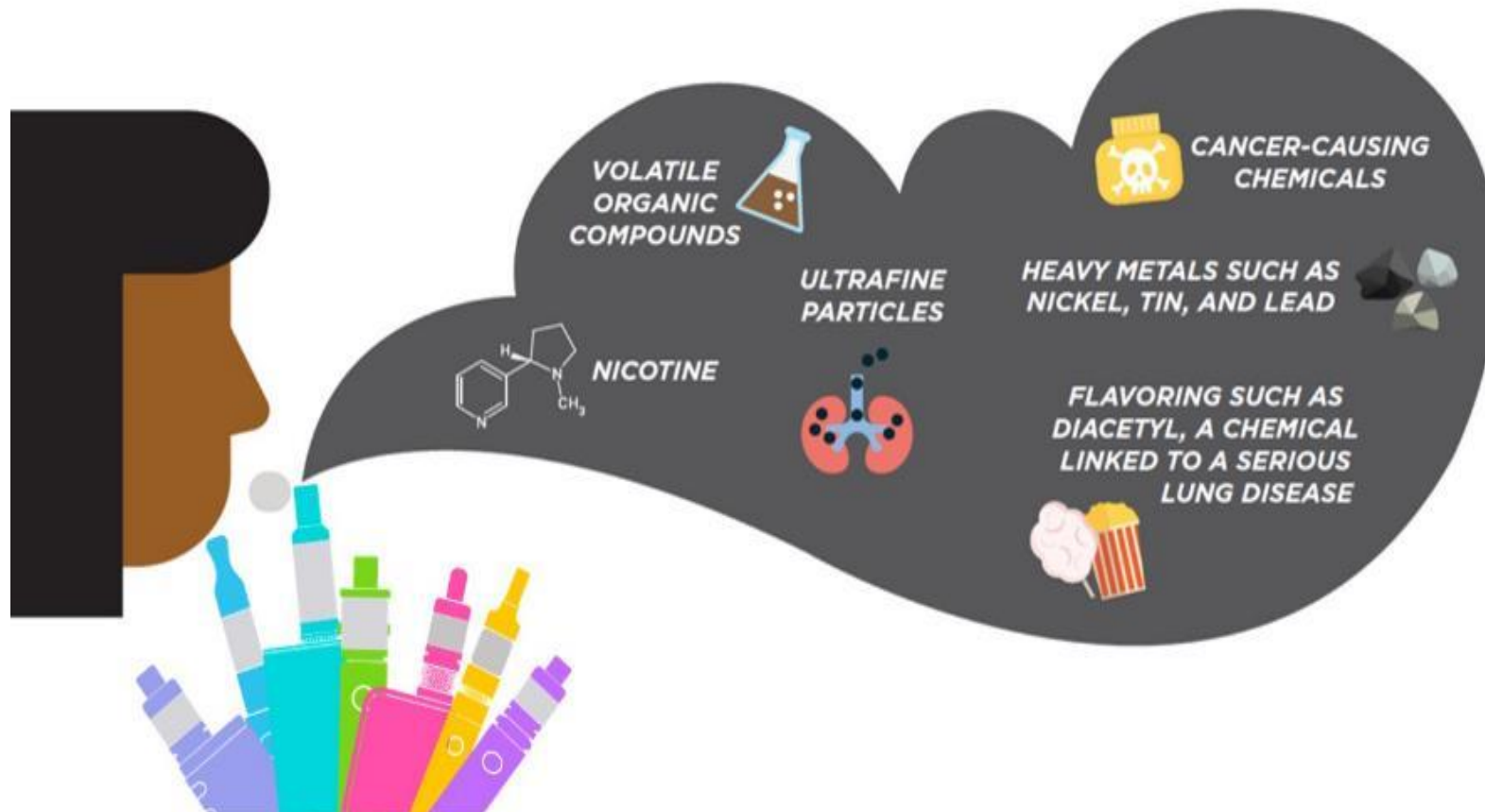
“Overall, the USPSTF found the evidence on the use of ENDS as a smoking cessation tool in adults, including pregnant women, and adolescents to be insufficient.”



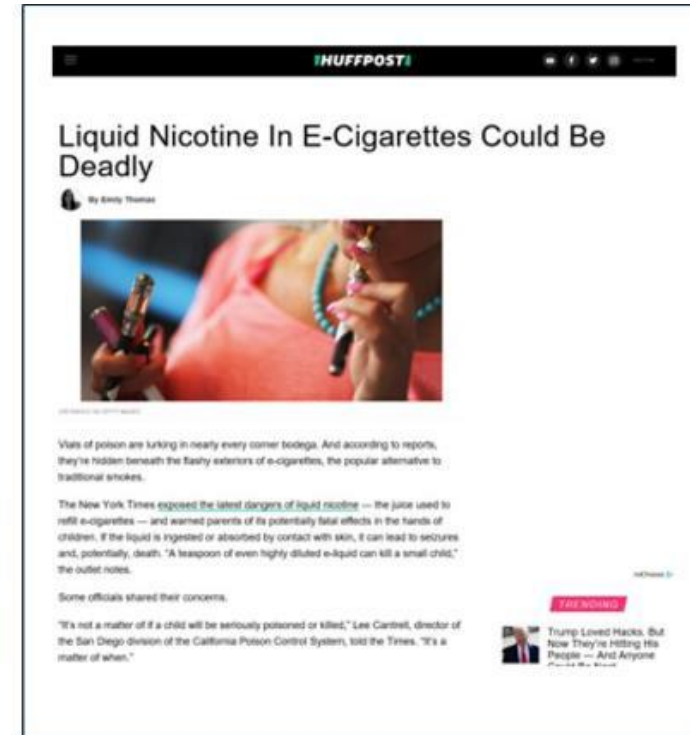
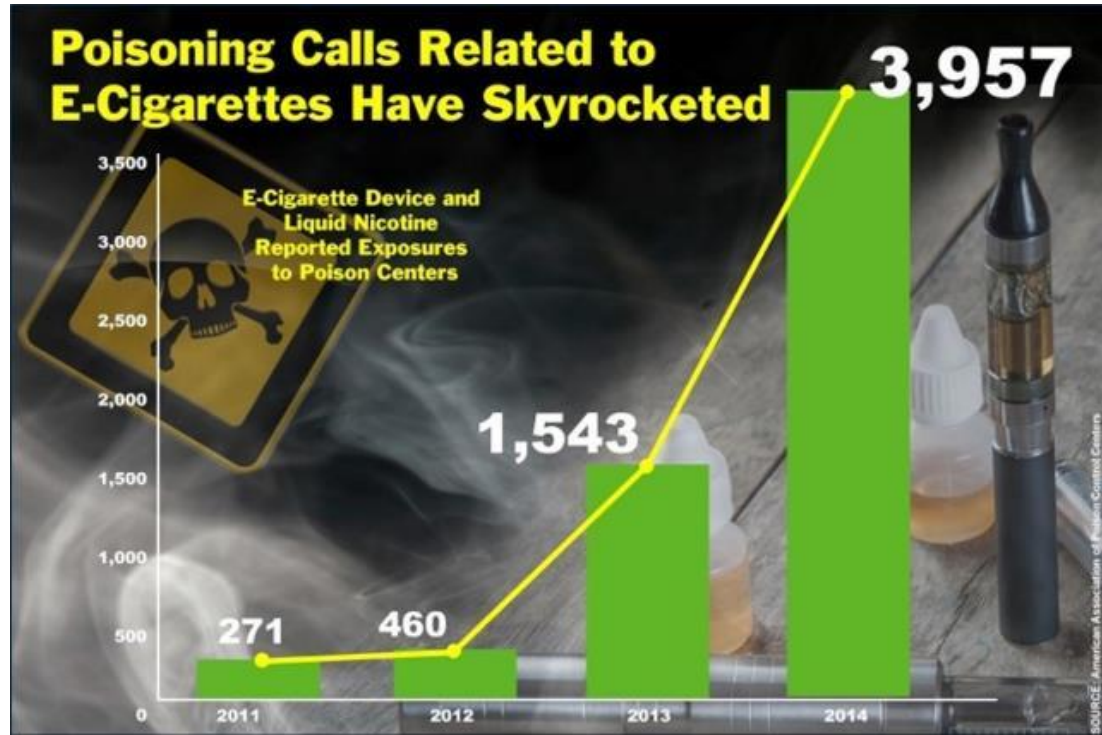
Conclusion 17-1. Overall, there is limited evidence that e-cigarettes may be effective aids to promote smoking cessation.

E-CIGARETTES MAKE AEROSOL, NOT VAPOR

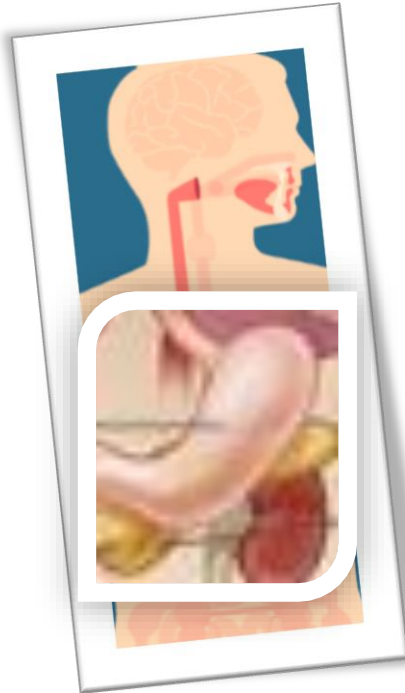
THE E-CIGARETTE AEROSOL THAT USERS BREATHE FROM THE DEVICE AND EXHALE CAN CONTAIN HARMFUL AND POTENTIALLY HARMFUL SUBSTANCES:



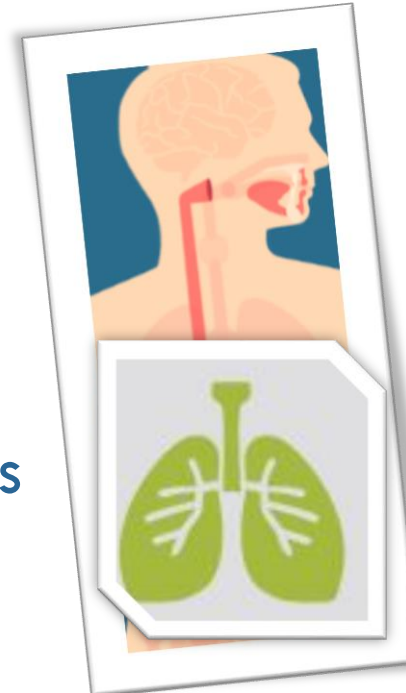
E-CIGARETTE POISONINGS



YOUR GUT CAN HANDLE MORE THAN YOUR LUNGS



Some e-cigarette manufacturers claim flavorings are safe because they meet the FDA definition of “Generally Recognized as Safe” (“GRAS”)



GRAS does not apply to products that are not food

NICOTINE POSES UNIQUE DANGERS TO YOUNG PEOPLE



E-Cigarette Use Among Youth and Young Adults

A Report of the Surgeon General



Chapter 3

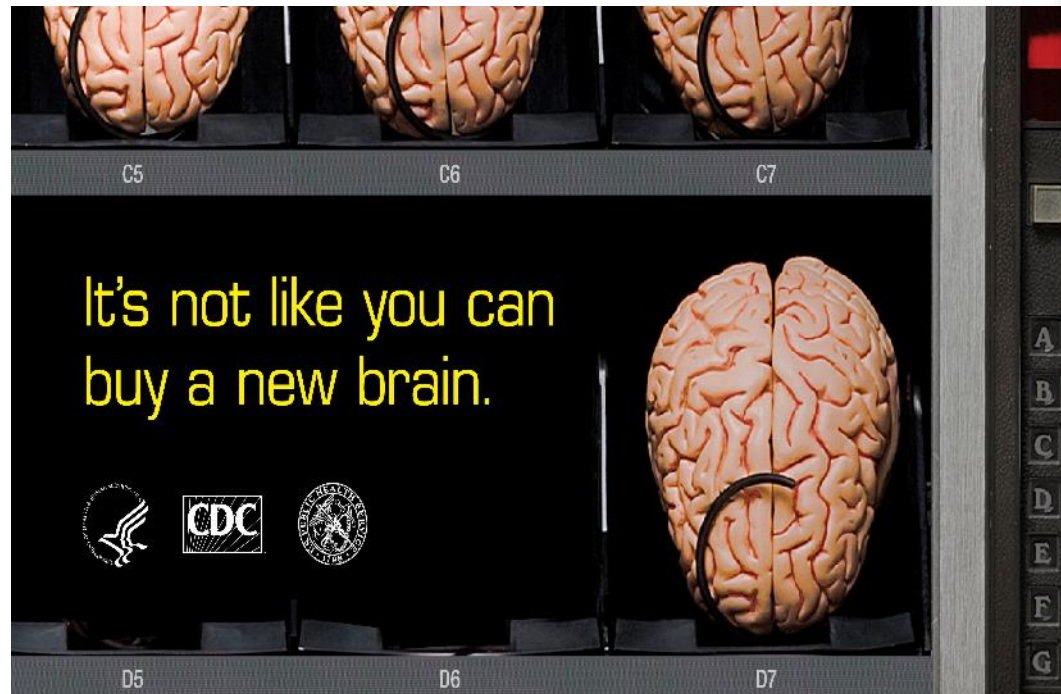
Conclusion 1, 2, & 5

1. Nicotine exposure during adolescence can cause addiction and can harm the developing adolescent brain.

2. Nicotine can cross the placenta and has known effects on fetal and postnatal development. Therefore, nicotine delivered by e-cigarettes during pregnancy can result in multiple adverse consequences, including sudden infant death syndrome, and could result in altered corpus callosum, deficits in auditory processing, and obesity.

5. Ingestion of e-cigarette liquids containing nicotine can cause acute toxicity and possibly death if the contents of refill cartridges or bottles containing nicotine are consumed.

SURGEON GENERAL'S ADVISORY ON E-CIGARETTE USE AMONG YOUTH (2018)



<https://e-cigarettes.surgeongeneral.gov/>

Surgeon General's Advisory on E-cigarettes and Youth

I, Surgeon General of the United States Public Health Service, VADH, of protecting our children from a lifetime of nicotine addiction and the epidemic of youth e-cigarette use. The recent surge in e-cigarette use types of e-cigarettes that have recently entered the market, is a cause to protect the health of our nation's young people.

KNOW THE RISKS

The E-cigarette Epidemic Among Youth

Considerable progress has been made in reducing cigarette smoking tobacco product landscape continues to evolve to include a variety of smokeless, and electronic products, such as e-cigarettes.¹ E-cigarette flavors, and other additives to the user via an inhaled aerosol.²

E-cigarettes entered the U.S. marketplace around 2007, and since then tobacco product use among U.S. youth.² E-cigarette use among 900% during 2011-2015, before declining for the first time during increased 78% among high school students during the past year, more than 3.6 million U.S. youth, including 1 in 5 high school students currently use e-cigarettes.⁴

E-cigarette aerosol is not harmless.² Most e-cigarettes contain nicotine, and other tobacco products.² Nicotine exposure during adolescence, which continues to develop until about age 25.² Nicotine exposure can also affect memory, and attention.^{1,2} Using nicotine in adolescence can also affect drug use.^{1,2} In addition to nicotine, the aerosol that users inhale and both themselves and bystanders to other harmful substances, including compounds, and ultrafine particles that can be inhaled deeply into the lungs.

Many e-cigarettes also come in kid-friendly flavors. In addition to people,⁵ some of the chemicals used to make certain flavors may be used to deliver other drugs, including marijuana.² In 2016, one-third of ever used e-cigarettes had used marijuana in e-cigarettes.⁶

For adults, e-cigarettes may have the potential to reduce risk for cigarette use to e-cigarettes; however, a majority of adults who use e-cigarettes the use of multiple tobacco products puts youth at even greater risk. Moreover, a 2018 National Academy of Sciences, Engineering, and Medicine report found moderate evidence that e-cigarette use increases the frequency of use. But any e-cigarette use among young people is unsafe, even if they are not addicted to nicotine.

E-cigarettes Come in Many Shapes and Sizes

E-cigarettes are a rapidly changing product class, and are known as "hookahs," "mods," and "vape pens."⁷ Recently, a new type of e-cigarette our nation's youth due to its minimal exhaled aerosol, reduced odor. Many of these new e-cigarettes look like a USB flash drive, among

USB flash drive shaped e-cigarettes is JUUL, which experienced a 600% surge in sales during 2016-2017, giving it the greatest market share of any e-cigarette in the U.S. by the end of 2017.⁸ Other companies are now also starting to sell e-cigarettes that look like USB flash drives.

All JUUL e-cigarettes have a high level of nicotine. A typical JUUL cartridge, or "pod," contains about as much nicotine as a pack of 20 regular cigarettes.¹⁰ These products also use nicotine salts, which allow particularly high levels of nicotine to be inhaled more easily and with less irritation than the free-base nicotine that has traditionally been used in tobacco products, including e-cigarettes. This is of particular concern for young people, because it could make it easier for them to initiate the use of nicotine through these products and also could make it easier to progress to regular e-cigarette use and nicotine dependence. However, despite these risks, approximately two-thirds of JUUL users aged 15-24 do not know that JUUL always contains nicotine.¹¹

You Can Take Action

We must take aggressive steps to protect our children from these highly potent products that risk exposing a new generation of young people to nicotine.¹² The bad news is that e-cigarette use has become an epidemic among our nation's young people. However, the good news is that we know what works to effectively protect our kids from all forms of tobacco product use, including e-cigarettes.^{1,2,12} We must now apply these strategies to e-cigarettes, including USB flash drive shaped products such as JUUL. To achieve success, we must work together, aligning and coordinating efforts across both old and new partners at the national, state, and local levels. Everyone can play an important role in protecting our nation's young people from the risks of e-cigarettes.

Information for Parents

- You have an important role to play in addressing this public health epidemic.
- Learn about the different shapes and types of e-cigarettes and the risks of all forms of e-cigarette use for young people at <https://e-cigarettes.surgeongeneral.gov/>.
- Set a good example by being tobacco-free. If you use tobacco products, it's never too late to quit. Talk to a healthcare professional about quitting all forms of tobacco product use. For free help, visit smokefree.gov or call 1-800-QUIT-NOW.
- Adopt tobacco-free rules, including e-cigarettes, in your home and vehicle.
- Talk to your child or teen about why e-cigarettes are harmful for them. It's never too late.
- Get the Surgeon General's tip sheet for parents, [Talk With Your Teen About E-cigarettes](https://e-cigarettes.surgeongeneral.gov/), at <https://e-cigarettes.surgeongeneral.gov/>. Start the conversation early with children about why e-cigarettes, including JUUL, are harmful for them.
- Let your child know that you want them to stay away from all tobacco products, including e-cigarettes, because they are not safe for them. Seek help and get involved.
 - Set up an appointment with your child's health care provider so that they can hear from a medical professional about the health risks of tobacco products, including e-cigarettes.
 - Speak with your child's teacher and school administrator about enforcement of tobacco-free school policies and tobacco prevention curriculum.
 - Encourage your child to learn the facts and get tips for quitting tobacco products at [Teen.smokefree.gov](https://teen.smokefree.gov/).

Information for Teachers

- You have an important role to play in addressing this public health epidemic.
- Learn about the different shapes and types of e-cigarettes and the risks of all forms of e-cigarette use, including JUUL, for young people at <https://e-cigarettes.surgeongeneral.gov/>.
- Develop, implement, and enforce tobacco-free school policies and prevention programs that are free from tobacco industry influence, and that address all types of tobacco products, including e-cigarettes.

POTENTIAL HEALTH RISKS OF E-CIGARETTES



Leads to initiation of combustible tobacco use among non-smokers, particularly children



Leads to relapse among former smokers



Diminishes the chances that a smoker will quit



Discourages smokers from using proven quit methods



Exposes children, pregnant women, and non-users to secondhand aerosol



Glamorizes or renormalizes tobacco use



Results in poisonings among users or non-users

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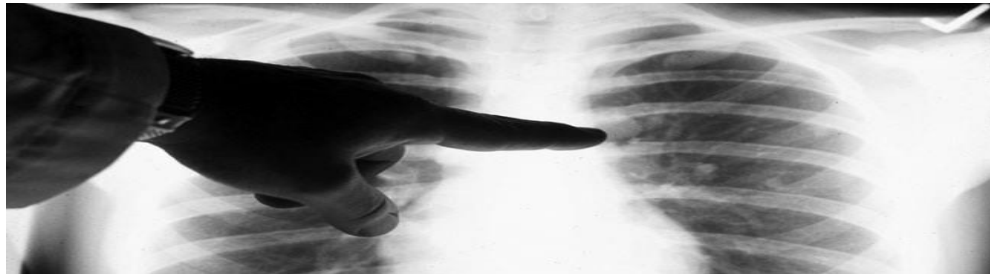
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What Can We Do About it?

PUBLIC HEALTH ACTIONS TO ADDRESS E-CIGARETTES

- **Federal Regulation**
- **Family Smoking Prevention and Tobacco Control Act**



- Signed into law on June 22, 2009
- Granted FDA the authority to regulate tobacco products
- Enhanced the ability to intensify policy to reduce tobacco industry influence:
 - Manufacturing
 - Marketing
 - Sale

- **State, Local, Territory**
- ***Potential Sub-National Action:***



- Including e-cigarettes in smokefree indoor air policies
- Restricting youth access to e-cigarette in retail settings
- Licensing retailers
- Establishing specific package requirements
- Setting price policies



MAJOR CONCLUSION

#7



“Action can be taken at the national, state, local, tribal, and territorial levels to address e-cigarette use among youth and young adults. **Actions could include incorporating e-cigarettes into smoke-free policies,** preventing access to e-cigarettes by youth, price and tax policies, retail licensure, regulation of e-cigarette marketing likely to attract youth, and educational initiatives targeting youth and young adults.”

EVERYONE HAS A ROLE IN ADDRESSING YOUTH E-CIGARETTE USE

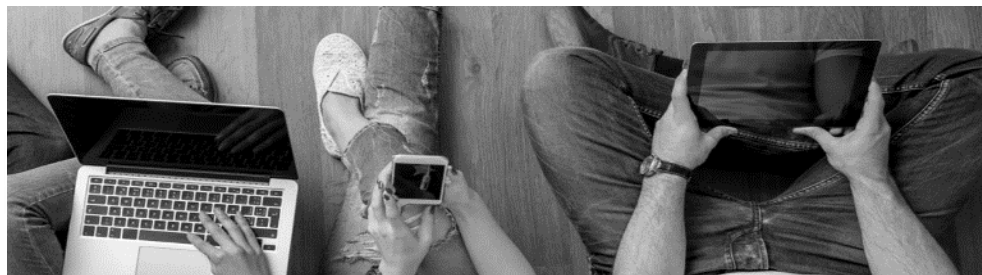


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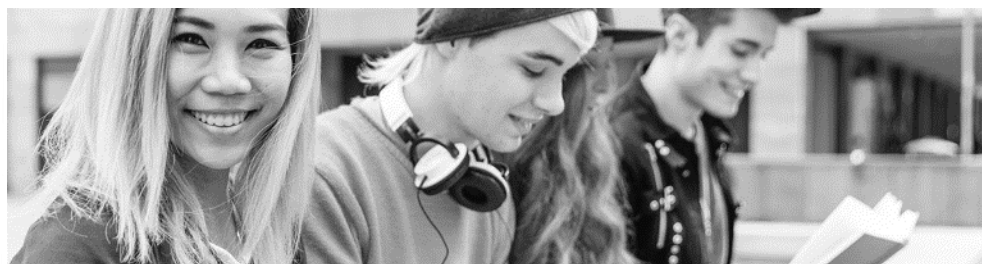
E-cigarettes are a tobacco product that produces an aerosol by heating a liquid that typically contains nicotine, flavorings, and other chemicals.

2



Several factors have contributed to the popularity of e-cigarettes, including advertising and the vast array of available flavors.

3



E-cigarette use is higher among young people than adults. As of 2014, e-cigarettes were the most commonly used tobacco product among U.S. youth.

4



Youth use of e-cigarettes is unsafe. Adult smokers must completely quit to realize benefits from e-cigarettes.

5



As the tobacco product landscape continues to diversify, it's important to modernize tobacco control strategies to adapt.

Michael A. Tynan
Office on Smoking and Health
mtynan@cdc.gov



www.cdc.gov/tobacco

E-CIGARETTES SHAPED LIKE USB FLASH DRIVES:
INFORMATION FOR PARENTS, EDUCATORS,
AND HEALTH CARE PROVIDERS

Electronic cigarettes (e-cigarettes) are battery-powered devices that can deliver nicotine and flavorings to the user in the form of an aerosol. E-cigarettes come in many shapes and sizes.

WHAT'S THE BOTTOM LINE?

- A new e-cigarette shaped like a **USB** flash drive is being used by students in schools.
- Nicotine is highly addictive and can **harm brain development**, which continues until about age 25.
- The use of any tobacco product—including e-cigarettes—is **unsafe** for young people.
- Parents, educators, & health care providers** can help prevent and reduce the use of all tobacco products, including e-cigarettes, by young people.

>> Learn HOW in this fact sheet.

CDC U.S. Department of Health and Human Services

KNOW THE RISKS Talk with Your Teen About E-cigarettes: A Tip Sheet for Parents

BEFORE THE TALK
Know the facts:

- Get credible information about e-cigarettes and young people at E-cigarettes.SurgeonGeneral.gov
- Be patient and ready to listen.
- Avoid criticism and encourage an open dialogue.
- Remember, your goal is to have a conversation, not to deliver a lecture.
- It's OK for your conversation to take place over time, in bits and pieces.

Set a positive example by being tobacco-free.

- If you use tobacco, it's never too late to quit. For free help, visit smokefree.gov or call 1-800-QUIT-NOW.

CDC U.S. Department of Health and Human Services

CDC Tobacco Free 2 hrs · 4

Something in this locker contains nicotine, which is addictive and can harm brain development. What is it?

Hiding in Lockers

Protect kids from e-cigarettes

https://www.cdc.gov/tobacco/basic_information/e-cigarettes/index.htm

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